

CONTRIBUTION TO A KNOWLEDGE OF THE FAUNA OF MANIPUR STATE, ASSAM.

V. COLEOPTERA.

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INTRODUCTION

The following account of the Coleoptera of Manipur State, Assam, is based mainly on a collection made by Dr. M. L. Roonwal, during a period of six months from July to December, 1945. The places of collection were situated mostly in the Imphal Valley and varied in

altitude from 2,000 ft. to 3,750 ft. Further details of the environment and geography of the various places may be had of an introductory note to the series by Roonwal¹.

The material which is deposited in the Zoological Survey of India, contains 71 species belonging to 19 families. As the chief interest of the collection lies in the geographical distribution of the various species, additional materials belonging to such species in the Survey's collections were also examined so that a fuller account of the distribution could be given.

GEOGRAPHICAL DISTRIBUTION

North-East India, of which Manipur State forms a part butting upon Burma, is the meeting place of the Siberian and the Manchurian Sub-Regions² of the Palæarctic Region and of the Indo-Chinese and the Indian Sub-Regions of the Oriental Region. Species occurring in the Ceylonese and the Indo-Malayan Sub-Regions and to a lesser extent in the Ethiopæan and the Australian Regions are also to be found in North-East India which is generally regarded as a part of the Indo-Chinese Sub-Region. Table I gives the distribution of various species under report. It will be observed that the number of species occurring in Burma, Assam and other hilly tracts of North India is practically the same. This is as one may expect to be the case, because conventionally all these areas constitute a part of the Indo-Chinese Sub-Region. However, the same is also true of the species occurring in the plains of India constituting the Indian Sub-Region. A possible explanation for this may be that the present material from Manipur comes from relatively lower altitudes of 2,000 ft. to 3,750 ft. Talbot³ who studied Indian butterflies (a group better known than most other Indian insects) stated that the faunal boundaries were principally a question of altitude. Some of the hills in Manipur State go as high as 10,000 ft., and it seems that much more collecting and study of the Coleoptera from these parts will have to be made for a better understanding of the distribution of the Order and of the different faunal boundaries. Certain other points of interest regarding the geographical distribution of the various species are mentioned below :

(a) FIRST RECORDS FROM INDIA.—Countries from where the species have been known earlier are given in parenthesis.

1. *Anadastus ventralis* Gorham, Languriidæ (Burma).
2. *A. vicinus* Arrow (Burma).
3. *Oenopia luteopustulata* Mulsant, Coccinellidæ (Burma ; East Indies).

(1) Roonwal, M.L. *Rec. Indian Mus.*, 46 : 123-126 (1949).

(2) The Zoogeographical Regions and Sub-Regions set out in *Atlas of Zoogeography* (Bartholomew's *Physical Atlas*, 5, 1911) have been employed in this paper.

(3) Talbot, G. 1939 *Fauna British India, ... Butterflies*, 1 : 42 (2nd edition) London.

4. *Verania vincita* Gorham, Coccinellidæ (Burma).
5. *Monolepta picturata* Jacoby, Chrysomelidæ (Burma).
6. *Haltica foveicollis* Jacoby, Chrysomelidæ (Burma).
7. *Phytoscaphus nubilus* Faust, Curculionidæ (Burma).
8. *Alcides scenicus* Faust, Curculionidæ (Burma, Tonking, Japan).
9. *Athesapeuta vinculata* Faust, Curculionidæ (Burma).

(b) FIRST RECORDS FROM ASSAM.—Localities from which the species have been recorded earlier are given in parenthesis.

1. *Chlaenius ocellatus* Andrewes, Carabidæ (Madhya Pradesh).
2. *Diaphanes marginella* (Hope), Lampyridæ (Nepal ; Eastern Himalayas).
3. *Hemiops crassa* (Gyllenhal), Elateridæ {Bengal, Burma, Malacca, Sumatra, Borneo}.
4. *Ceolophora bissellata* Mulsant, Coccinellidæ (Bengal, South India, Malacca, Sumatra, Java, Borneo, Philippine Islands, New Guinea).
5. *Gymnopleurus aethiops* Sharp. Scarabæidæ (Cochin, Nilgiri Hills, N. Kanra, Ceylon, Siam, Hongkong, Formosa).
6. *Aphodius costatulus* Schmidt, Scarabæidæ (Belgaum, Kulu).
7. *Adoretus compressus* (Weber), Scarabæidæ (Bihar, Madras, S. Ceylon).
8. *Aphrodisium cribricolle* Poll, Cerambycidæ (Sikkim).
9. *Galerucella placida* Baly, Chrysomelidæ (N. W. India, Bihar, Bengal, South India).
10. *Monolepta lineata* Weise, Chrysomelidæ (Nilgiri Hills).
11. *M. maculosa* Allard (Bombay).
12. *Haltica cyanea* Weber, Chrysomelidæ (Punjab, Bombay, Bengal, Indo-China, China, Japan, Australia).
13. *Xanthochelus blumeæ* Marshall, Curculionidæ (Dehra Dun).
14. *Paracycnotrachelus cygneus* (Fabr.), Curculionidæ, (Bengal, Burma, Cambodia, Penang, Sumatra, Java).
15. *Gasterocercus anatinus* Chevrolet, Curculionidæ (Andaman Islands)

(c) FIRST RECORDS FROM SOUTH INDIA OF SPECIES ALREADY KNOWN FROM NORTH-EAST INDIA.

1. *Coilodera penicillata* Hope, Scarabæidæ. Now recorded from Nilgiri Hills, earlier records from Sikkim, Assam and Burma.
2. *Glenea pulchella* Thompson, Cerambycidæ. Now recorded from S. Mysore and Nilgiri Hills ; earlier records from Assam and Burma.

TABLE I.—SHOWING THE DISTRIBUTION OF VARIOUS SPECIES

| | | | | | | | | | |
|----|--|--|---|---|---|---|---|--|--|
| | LYCIDAE | | | | | | | | |
| 6 | <i>Plateros fletcheri</i> Kleine | | — | | — | — | — | | |
| | LAMPYRIDAE | | | | | | | | |
| 7 | <i>Diaphanes marginella</i> (Hope) | | | — | | — | | | |
| | CANTHARIDAE | | | | | | | | |
| 8 | <i>Themus nepalensis</i> (Hope) | | | — | | — | | | |
| 9 | <i>Discodon semiustum</i> (Gorh.) | | | | — | — | — | | |
| | MELOIDAE | | | | | | | | |
| 10 | <i>Mylabris orientalis</i> (Marauel) | | | — | — | — | — | | |
| 11 | <i>Mylabris cichorii</i> (Linn.) | | — | — | — | — | | | |
| | ANTHICIDAE | | | | | | | | |
| 12 | <i>Formicomus himalayanus</i> (Krek-Str.) | | | — | — | — | | | |
| 13 | <i>Formicomus multillarius</i> (Saund.) | | — | | — | — | — | | |

TABLE I.—SHOWING THE DISTRIBUTION OF VARIOUS SPECIES—*contd.*

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| | | | | | | | | | | | |
|----|---|---|---|---|---|---|---|---|---|---|---|
| 52 | <i>Monolepta lineata</i> Weise | | | | | | | | | | |
| 53 | <i>Monolepta signata</i> (Oliv.) | — | — | — | — | — | — | — | — | — | — |
| 54 | <i>Monolepta picturata</i> Jac. | | | | | — | — | — | — | — | |
| 55 | <i>Monolepta maculosa</i> Alld. | | | | — | | — | — | — | | |
| 56 | <i>Haltica cyanea</i> Weber | | | — | — | | — | — | — | — | — |
| 57 | <i>Haltica coerulea</i> (Oliv.) | — | — | — | | | — | — | — | — | |
| 58 | <i>Haltica foveicollis</i> Jac. | | | | | | | — | — | | |
| 59 | <i>Aspidonorpha sanctae-cruicis</i> (Fabr.) | — | — | — | — | — | — | — | — | — | |
| | CURCULIONIDAE | | | | | | | | | | |
| 60 | <i>Esamus circumdatus</i> (Weid.) | | | — | — | — | — | — | — | — | |
| 61 | <i>Tanymecus indicus</i> Faust | | | — | — | — | — | — | | | |
| 62 | <i>Episomus guttatus</i> Bohm. | | | | | — | — | — | — | — | |

TABLE I.—SHOWING THE DISTRIBUTION OF VARIOUS SPECIES—*concl.*

SYSTEMATIC ACCOUNT

Order COLEOPTERA

Sub-Order ADEPHAGA

Family CARABIDAE

1. *Amblystomus fuscescens* (Motschulsky)

1858. *Hispalis fuscescens* Motschulsky, *Etud. Ent.* 7 : 23 (Type locality : Burma).
 1864. *Hispalis fuscescens* Motschulsky, *Bull. Soc. Nat. Moscou*, 37 : 233.
 1919. *Amblystomus fuscescens* (Mots.), Andrewes, *Trans. ent. Soc. Lond.* 1919 : 198.
 1931. *Amblystomus fuscescens* (Mots.), Csiki, *Coleopt. Cat., Berl.* pt. 115, Carabidae : 923.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 10-13. X. 1945.

Remarks.—Csiki gives its distribution as British India ; the type comes from Burma.

2. *Amblystomus quadriguttatus* (Motschulsky)

1858. *Hispalis quadriguttatus* Motschulsky, *Etud. Ent.* 7 : 23. (Type locality : Ceylon).
 1931. *Amblystomus quadriguttatus* (Mots.), Csiki, *Coleopt. Cat., Berl.* pt. 115, Carabidae : 1925.

Material.—1 example : Manipur, 16 miles N. of Imphal on Dimapur Road, ca. 3,500 ft., 8. VIII. 1945.

Remarks.—Recorded by Csiki from India, Ceylon and the Philippines.

3. *Chlaenius ocellatus* Andrewes

1923. *Chlaenius ocellatus* Andrewes, *Ann. Mag. nat. Hist.*, (9)11 : 339 (Type locality : Nagpur).
 1931. *Chlaenius ocellata* Andr., Csiki, *Coleopt. Cat. Berl.*, pt. 115, Carabidae : 934.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 24. X. 1945.

Remarks.—Hitherto known only from Nagpur and Jubbulpur in the Central Provinces (now known as Madhya Pradesh), the species is being recorded for the first time from Assam.

4. *Orthogonius duplicatus* (Wiedemann)

1819. *Carabus duplicatus* Wiedemann, *Zool.*, 1(3) : 166 (Type locality : East Indies).
 1825. *Orthogonius duplicatus* (Wied.), Dejean, *Sp. gen. Coleopt.* 1 : 279.
 1846. *Orthogonius puncticollis* Schmit—Goebel, *Faunula Coleopt. Burma*, 57 (Type loc. : Martaban).

1846. *Orthogonius profundestriatus* Schmidt-Goebel, *Faunula Coleopt. Burma* : 58 (Type loc. : Tenasserim).
1871. *Orthogonius puncticollis* Schmidt-Goebel, Chaudoir, *Ann. Soc. ent. Belg.* 14 : 113 (sinks *O. profuncestriatus*).
1921. *Orthogonius duplicatus* (Wied.), Andrewes, *Trans. ent. Soc. Lond.* 1921 : 165 (sinks *O. puncticollis*).
1923. *Orthogonius duplicatus* (Wied.), Andrewes, *Trans. ent. Soc. Lond.*, 1923 : 32 (synonymy discussed).
1932. *Orthogonius duplicatus* (Wied.), Csiki, *Coleopt. Cat., Berl. pt. 124, Carabidae* : 1588.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 3. IX. 1945.

Remarks.—Csiki gives its distribution as British India, Burma, Laos, Cochin-China, Malaya and Java. Exact locality from India is not mentioned by him. Besides the present and other material from Assam, the Zoological Survey of India (Z. S. I.) collections contain examples from Uttar Pradesh (Former United Provinces), Bihar, Orissa, Bengal and Bhutan.

Sub-Order POLYPHAGA

Family HYDROPHILIDAE

5. *Hydrous indicus* Bedel

1892. *Stethoxus indicus* Bedel, *Rev. Ent. Caen.*, 10 : 310, 316 (Type locality : N. India, Moradabad).
1928. *Hydrous indicus* (Bedel), d'Orchymont, *Cat. Indian Ins.*, pt. 14 : 127.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., —VII. 1945.

Remarks.—This species is widely distributed in India, examples being present in the Z. S. I. collections from the following parts of the country : Bengal, Bihar, Punjab and Madras State. It has also been recorded from Assam and Sind.

Family LYCIDAE

6. *Plateros fletcheri* Kleine

1930. *Plateros fletcheri* Kleine, *Stettin. ent. Ztg.*, 91 : 97 (Type locality : Nilgiri Hills).
1931. *Plateros fletcheri* Kleine, *Cat. Indian Ins.*, pt. 21 : 32.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., at light, 9. XI. 1945.

Remarks.—The species has been recorded from Nilgiri Hills in the South and Shillong (Assam) in the North-East.

Family LAMPYRIDAE

7. *Diaphanes marginella* (Hope)

1831. *Lampyris marginella* Hope, in Gray, *Zoological miscellany* : 26 (London) (Type locality : Nepal).
1854. *Lamprohiza ? marginella* (Hope), Motschulsky, *Etud. Ent.*, 3 : 22.

1880. *Lampyris (Diaphanes) marginella* (Hope), Gorham, *Trans. ent. Soc. Lond.*, 1880 : 96.
 1910. *Diaphanes marginellus* (Hope), Olivier, *Coleopt. Cat., Berl.* pt. 9, Lam-pyridæ : 32.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 5. XI. 1945.

Remarks.—This species has already been recorded from Eastern Himalayas although the present record is the first one from Assam. There is one example from Rajashahi (Bengal) also in the Z. S. I. collection.

Family CANTHARIDAE

8. *Themus nepalensis* (Hope)

1831. *Telephorus nepalensis* Hope, in Gray, *Zoological miscellany* : 26 (London) (Type locality : Nepal).
 1889. *Telephorus nepalensis* (Hope), Gorham, *Proc. zool. Soc. Lond.*, 1889.
 1926. *Themus nepalensis* (Hope), Champion, *Ent. monthl. Mag.*, 62 : 127.
 1929. *Themus nepalensis* (Hope), Pic., *Bull. Soc. ent., Fr.*, 1929 : 196.
 1939. *Themus nepalensis* (Hope), Delkeskamp, *Coleopt. Cat., Berl.* pt. 165, Cantharidæ : 164.

Material.—1 example : Manipur, below Modbung near Imphal, ca. 3,500 ft., —.XI. 1945.

Remarks.—Hitherto known from Nepal, the present record from Manipur is of interest.

9. *Discodon semiustum* (Gorham)

1899. *Telephorus semiustum* Gorham, *Proc. zool. Soc. Lond.*, 1899 : 99 (Type locality : Sibsagar, Assam).
 1926. *Discodon semiustum* (Gorh.), Champion, *Ent. monthl. Mag.*, 2 : 127, 202.
 1939. *Discodon semiustum* (Gorh.), Delkeskamp, *Coleopt. Cat. Berl.*, pt. 165, Cantharidæ : 164.

Material.—3 examples : Manipur, 16 miles N. of Imphal on Dimapur Rd., ca. 3,500 ft., 7.22. X. 1945.

Remarks.—The species is already known from Assam and a variety of it (*basipenne* Pic) is also known from Burma.

Family MELOIDAE

10. *Mylabris orientalis* Marseul

1872. *Mylabris orientalis* Marseul, *Monograph Mylab. (Mem. Soc. Liege)* 451 (Reprint p. 91) (Type locality : East India).
 1909. *Mylabris orientalis* var. *antefasciata* Pic, *Echange*, 25 : 175 (Type locality : Burma).
 1909. *Mylabris orientalis* var. *birmanica* Pic, *Echange*, 25 : 175 (Type locality : Burma).
 1917. *Mylabris orientalis* (Mars.), Borchmann, *Coleopt. Cat., Berl.* pt. 69, Meloidæ : 44.

Material.—11 examples as follows : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft.,—VIII. 1945 (1 ex.), 14-19. IX. 1945 (1 ex.), 20-30.JX.1945 (1 ex.), 8.X.1945 (1 ex.), —. XI.1945 (1 ex.), 5. XI. 1945 (6 ex.).

Remarks.—Already recorded from East India and Burma, the species is represented in the Z. S. I. collections by examples from Bengal (Darjeeling District), Assam (Sibsagar and Shillong), Nepal and Bhutan.

11. *Mylabris cichorii* (Linneaus)

- 1764. *Meloe cichorii* Linneaus, *Museum Ludovicae ulricae Regiae* : 103 (Type locality : Orient).
- 1775. *Mylabris cichorii* (Linn.), Fabricius, *Syst. Ent.* : 261 (China).
- 1917. *Mylabris cichorii* (Linn.), Borchmann, *Coleopt. Cat., Berl. pt. 69. Meloidae* : 29.

Material.—21 examples : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 2.X.1945 (1 ex.), 4.X.1945 (7 ex.), 7-8.X.1945 (2 ex.), 18.X.1945 (4 ex.), 1. XI. 1945 (7 ex.).

Remarks.—The species occurs in China, India and Australia. Besides the present and earlier material from Assam, examples are present in the Z. S. I. collections from the following localities : Gilgit, Murree, Lucknow and Dehra Dun, Calcutta, Darjeeling district, Sikkim and Mysore.

Family ANTHICIDAE

12. *Formicomus himalayanus* Krekich-Strassoldo

- 1914. *Formicomus himalayanus* Krekich-Strassoldo, *Verh. Zool.-Bot. Ges. Wien.* 64 : 109 (Type locality : Assam).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 4.X.1945.

Remarks.—The species is already known from various parts of Assam and from Darjeeling district, Bengal.

13. *Formicomus mutillarius* (Saunders)

- 1836. *Anthelephila mutillaria* Saund., *Trans. ent. Soc. Lond.* 1 : 66 (Type locality : Hooghly).
- 1911. *Formicomus mutillarius* (Saund.), Pic, *Coleopt. Cat., Berl. pt. 36, Anthicidae* : 19.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 8.X.1945.

Remarks.—Pic records it from India, Burma and Tonking. Besides other material from Assam, examples from Pusa, Bihar, are also present in the Z.S.I. collections.

Family ELATERIDAE

14. **Hemiops crassa** (Gyllenhal)

1817. *Elater crassa* Gyllenhal, in Schonher, *Synonymia Insectorum*, 3 : append. 135 (Type locality : East Indies).
1927. *Hemiops crassa* (Gyll.), Coleopt. Cat., Berl. pt. 88, Elateridae : 503.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 19.IX.1945.

Remarks.—The species, reported here for the first time from Assam, has already been recorded from Bengal, Burma, Malacca, Sumatra and Borneo. In the Z.S.I. collection several examples from Sikkim, and Assam (Cachar, North Khasi Hills, Shillong, etc.), are present.

Family BUPRESTIDAE

15. **Sternocera aequisignata** Saunders

1866. *Sternocera aequisignata* Saunders, Trans. ent. Soc. Lond. (3) 5 : 298 (Type locality : Pachbon, Siam).
1926. *Sternocera aequisignata* Saund., Obenberger, Coleopt. Cat., Berl. pt. 84 : Buprestidae : 6.

Material.—4 examples : Manipur, Imphal Valley, 2,000 ft., 10.IX.1945 (2 ex.), 23.X.1945 (1 ex.), —.XII.1945 (1 ex.).

Remarks.—The species is distributed in N. India, Burma and Siam. It is represented in the Z.S.I. collections from Bihar (Sahibgunj), Bengal (Malda, Berhampur and Darjeeling district), Assam (Manipur) and Burma.

Family LANGURIIDAE

16. **Anadastus ventralis** Gorham

1896. *Anadastus ventralis* Gorham, Ann. Mus. Civ. Genova, 36 : 273 (Type locality : Burma).
1925. *Anadastus ventralis* Gorh., Arrow, Fauna British India.. Clavicornia, Erotylidae, Languriidae and Endomychidae : 215 (London).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 8.X.1945.

Remarks.—Previously known from the Karen Hills, Burma, the species is being recorded here for the first time from India.

17. **Anadastus dohertyi** Arrow

1925. *Anadastus dohertyi* Arrow, Fauna British India.. Clavicornia, Erotylidae, Languriidae and Endomychidae : 216 (London). (Type locality : Patkai Mountains, Assam).

Material.—3 examples : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., on grass, 7.X.1945 (1 ex.), 8.X.1945 (1 ex.). Below Modbung near Imphal, ca. 3,500 ft., 1.XI.1945 (1 ex.).

Remarks.—The fore-mentioned examples differ from the typical form in that their abdomens are rather reddish towards the apices instead of being black or piecous.

18. *Anadastus vicinus* Arrow

1925. *Anadastus vicinus* Arrow, *Fauna British India.. Clavicornia, Erotylidae, Languriidae and Endomychidae* : 226 (London). (Type locality : Burma ; Siam).

Material.—1 example : 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 1.X.1945.

Remarks.—This is the first record of the species from India.

Family EROTYLIDAE

19. *Episcapha quadrimacula* (Wiedemann)

1823. *Engis quadrimacula* Wiedemann, *Zool. Mag. Altona*, (2) 1 : 132 (Type locality : Java).
1825. *Dacne quadrimacula* (Wied.), Macleay, *Annulosa Javanica* : 41.
1842. *Episcapha quadrimacula* (Wied.), Lacordaire, *Monograph Erotylidae* : 53.
1925. *Episcapha quadrimacula* (Wied.), Arrow, *Fauna British India.. Clavicornia, Erotylidae, Languriidae and Endomychidae* : 39 (London).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 1.X.1945.

Remarks.—This species has been regarded as perhaps the most abundant and widely distributed of all the oriental Erotylidae. Arrow gives its distribution as follows : Ceylon, South India (Nilgiri Hills), Uttar Pradesh (Kumaon Hills), Assam (Garo Hills, Sylhet), Sikkim, Bengal (Berhampur), Burma (Tenasserim), Indo-China, Malaya Peninsula, Sumatra, Java, Borneo and the Philippine Islands. The Z.S.I collections contain examples from other parts of Assam, Bengal and U.P and also a few specimens from Delhi.

Family COCCINELLIDAE

20. *Coccinella septempunctata* Linneaus

1758. *Coccinella 7-punctata* Linneaus, *Systema Naturae*, (ed. X) 365 (Type locality : Europe).
1909. *Coccinella septempunctata* L., Lefroy, *Indian Insect Life* : 306 (Calcutta).
1932. *Coccinella septempunctata* L., Korschefsky, *Coleopt. Cat., Berl. pt. 120. Coccinellidae*, 2 : 486-494.

Material.—3 examples : Manipur, near Modbung, ca. 3,500 ft., 1.XI.1945 (2 ex.), 7.XI.1945 (1 ex.).

Remarks.—The markings on the three examples mentioned above are constant and identical with the typical pattern of the species. Though of palaearctic origin, the species extends beyond the limits of that Region. In India it is more common in the north than in the south.

21. *Coccinella repanda* Thunberg

1781. *Coccinella repanda* Thunberg, *Nov. Ins. Spec.*, 1 : 18 (Type locality : 'Cape of Good Hope'. This record is probably due to an error).
1909. *Coccinella repanda* Thunb., Lefroy, *Indian Insect Life* : 306 (Calcutta).
1932. *Coccinella repanda* Thunb., Korschefsky, *Coleopt. Cat., Berl.* pt. 120, *Coccinellidae*, 2 : 483-485.

Material.—1 example : Manipur, near Modbung, ca. 3,500 ft., 1.XI.1945.

Remarks.—The example mentioned above has the typical pattern of the species which is widely distributed in the plains of India and is also recorded from central China, Sunda Islands, Molucca Islands, New Guinea, Australia, New Zealand, etc. In the Z.S.I. the species is represented by examples from Java, Burma, Andamans, Assam, Bengal, Bihar, Orissa, South India (Eastern Ghats), Bombay, Rajasthan, Madhya Pradesh and Uttar Pradesh, as far as Lucknow. It would be of interest to find out its exact western limits of distribution.

22. *Harmonia arcuata* (Fabricius)

1787. *Coccinella arcuata* Fabricius, *Mantissa Insectorum*, etc. 1 : 55 (Type locality : China).
1850. *Harmonia arcuata* (Fabr.), Mulsant., *Ann. Soc. Agric. Lyon* (2) 2 : 77.
1874. *Coccinella arcuata* Fabr., Crotch, *Revision of the coleopterous family, Coccinellidae* : 110 (London).
1932. *Coccinella* (sub-gen. *Harmonia*) *arcuata* Fabr., Korschefsky, *Coleopt. Cat., Berl.* pt. 120, *Coccinellidae* : 440.

Material.—64 examples : Manipur, Imphal Valley, 2,000 ft.,—VII. 1945 (35 ex.), 31.VII.1945, at light (1 ex.), 1.IX.1945 (1 ex.), 3.IX.1945 (1 ex.), 5-9.IX.1945 (4 ex.), 10-13.IX.1945 (22 ex.).

Remarks.—The species is very variable as regards its pronotal and elytral patterns. In the 64 examples mentioned above this fact is very well demonstrated. Certain specimens have been given separate varietal names by certain authors but in view of the fact that very few examples would look exactly alike, there is hardly any practical use of such names. Some of the variations in the pattern are illustrated in text-figure 1. It will also be noted that an example of this species has been collected at light.

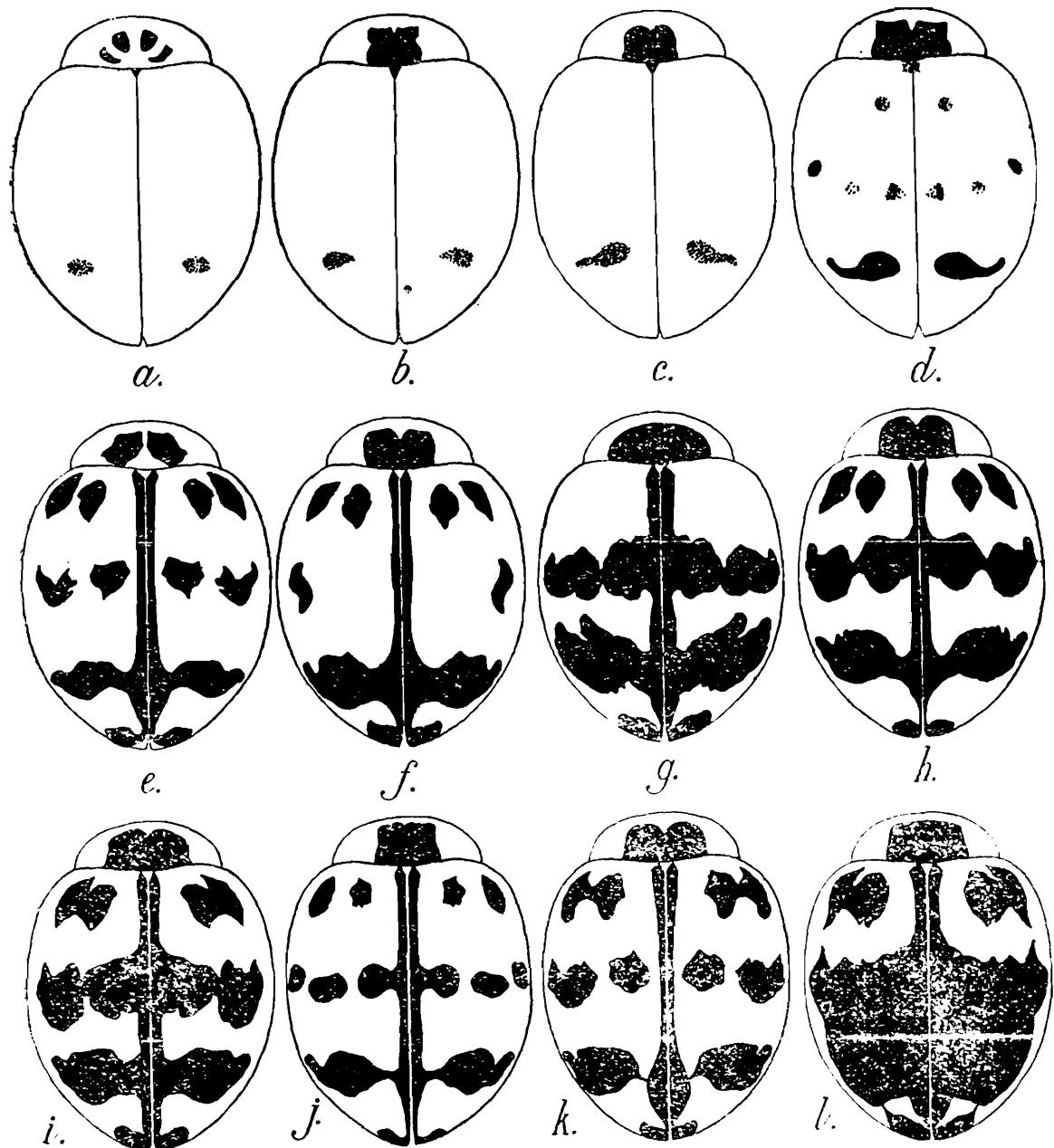
The species occurs mostly in peninsular and N.-E. India, many examples being present from these parts in the Z.S.I. collections. Outside India the species is reported from Burma, China, Formosa, the Philippines and Sunda Islands, New Guinea, Australia, New Caledonia and doubtfully so from South Africa.

23. *Leis dimidiata* (Fabricius)

1781. *Coccinella dimidiata* Fabricius, *Species Insectorum* : 94 (Type locality : India).
1850. *Leis dimidiata* (Fabr.), Mulsant, *Ann. Soc. Agric. Lyon* (2) 2 : 242.
1932. *Leis dimidiata* (Fabr.), Korschefsky, *Coleopt. Cat., Berl.* pt. 120, *Coccinellidae*, 2 : 273.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 6.X.1945.

Remarks.—The humeral black spot is present in the above-mentioned example. The species has hitherto been recorded from Kashmir to Nepal along the Himalayas and also from China and Japan. There are examples from the following localities in the Z.S.I. collection : Kashmir ; Kulu, Gurdaspur and Palampur in the Punjab ; Sikkim ; Nepal ; Assam and Bengal (Calcutta).



TEXT-FIG. 1, *a-l.* Colour variation in *Harmonia arcuata* (Fabr.).

24. *Oenopia luteopustulata* Mulsant

- 1850. *Oenopia luteopustulata* Mulsant, Ann. Soc. Agric. Lyon (2) 2 : 421 (Type locality : Assam).
- 1853. *Anatis thibetiana* Mulsant, Anno Soc. linn. Lyon, 1 : 148 (Type locality : Tibet).
- 1874. *Coelophora luteopustulata* (Muls.), Crotch, Revision of the coleopterous family Coccinellidae : 156 (London).
- 1932. *Oenopia luteopustulata* (Muls.), Korschefsky, Coleopt. Cat., Berl. pt. 120, Coccinellidae : 288.

Material.—5 examples : Manipur, Imphal Valley, 2,000 ft., 3.IX.1945 (2 ex.), 10-13.IX.1945 (2 ex.). Near Modbung, ca. 3,500 ft., 1.XI.1945 (1 ex.).

Remarks.—This is another very variable species. Ordinarily, as described originally by Mulsant, each elytron has five pale-orange spots (2, 2, 1) separated by a network of black pigment. The latter is often absent on the external margin and when the marking is further reduced it seems as if only two irregular transverse bands are present. Three of the five examples mentioned above exhibit this pattern. In the other two examples the post-median band is obliterated and only the very narrow sutural and the broad sub-basal bands are present. The sub-basal band on an elytron extends at its outer end towards the base so as to mark out a scutellar spot which is paler than the rest of the elytron.

Described originally from Assam, the species has also been recorded from Chamba (N.W India), Tibet and Burma. In the Z.S.I. collections examples are present from Simla, Kumaon, Lucknow, Sikkim, Darjeeling, Kurseong and the Andaman Islands. A few examples from Nepal in the British Museum collection have also been seen by the author.

O. *Luteopustulata* var. *pedicata* (Mulsant)

- 1853. *Coelophora pedicata* Mulsant, *Ann. Soc. linn. Lyon.*, 1 : 180 (Type locality : East Indies).
- 1912. *Coelophora luteopustulata* var. *pedicata* (Muls.), Sicard, *Ann. Soc. ent. Fr.* 71 : 500.
- 1932. *Oenopia luteopustulata* var. *pedicata* (Muls.), Korschefsky, *Coleopt. Cat., Berl. pt. 120, Coccinellidae* 2 : 288.

Material.—3 examples : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 4.X.1945 (1 ex.), 22.X.1945 (2 ex.).

Remarks.—While one (4.X.1945) of the three examples mentioned above has four cells on an elytron as described for the typical *pedicata*, the other two have only three cells, i.e., two basal and one apical.

The type locality is East Indies ; Sicard recorded it also from Burma. The present record is the first one from India. In the Z.S.I. collection examples from Shillong are also present.

25. *Coelophora sexareata* Mulsant

- 1853. *Coelophora sexareata* Mulsant, *Ann. Soc. linn. Lyon.*, 1 : 181 (Type locality : North India).
- 1932. *Coelophora sexareata* (Muls.), Korschefsky, *Coleopt. Cat., Berl. pt. 120, Coccinellidae* 2 : 296.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 18.X.1945.

Remarks.—Recorded earlier from North India and Burma, the species is represented in Z.S.I. collection by examples from Darjeeling, Kalimpong, Kurseong and Sikkim.

C. *sexareata* var. *lacerata* Sicard

- 1912. *Coelophora sexareata* Muls. var. *lacerata* Sicard, *Ann. Soc. ent. Fr.* 81 : 500 (Type locality : Burma).

Material.—2 examples : Manipur, near Modbung, ca. 3,500 ft., 1.XII. 1945 (1 ex.) ; 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 1.XII. 1945 (1 ex.).

Remarks.—The variety *lacerata* is distinguished by its interrupted black lines on the elytra and has hitherto been known only from Burma.

26. *Coelophora bissellata* Mulsant

1850. *Coelophora bissellata* Mulsant, Ann. Soc. Agric. Lyon (2) 2 : 400 (Type locality : Bengal ; Java).
 1932. *Coelophora bissellata* (Muls.), Korschefsky, Coleopt. Cat., Berl. pt. 120, Coccinellidae 2 : 291.

Material.—3 examples : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 18.X.1945 (2 ex.). Near Modbung, ca. 3,500 ft., 1.XI. 1945 (1 ex.).

Remarks.—In one example (1.XI.1945) the sutural spot (situated posterior to the apex of scutellum) is confluent with the sub-basal spot and the external margin of the elytron is also having a black border. Mulsant noted a tendency for the union between the said spots in certain of the examples seen by him. Originally described from Bengal and Java, the species has since been recorded from Malacca, Sumatra, Java, Borneo, the Philippine Islands and New Guinea. The Z.S.I. collections contain examples from Kumaon Hills, Sikkim, Assam, Darjeeling and the Eastern Ghats (Kiliyur, ca. 2 miles from Yercaud, ca. 4,000 ft., Shevaroy Hills, Salem district, 8.VI.1929, H. S. Pruthi).

27. *Verania vincita* Gorham

1895. *Verania vincita* Gorham, Ann. Mus. Civ. Genova (2) 34 : 686 (Type locality : Burma).

Material.—6 examples : Manipur, Imphal Valley, 2,000 ft., 3.IX.1945 (2 ex.), 10-13.IX.1945 (4 ex.).

Remarks.—Hitherto known only from Burma, the species is being recorded for the first time from India. Other material in the Z.S.I. comes from Nepal, Assam-Bhutan Frontier, Assam (Siliguri), Bihar (Purnea district) and South India (Palni Hills, 6,500-7,000 ft., 28.VIII. 1922, S. Kemp ; Waltair,—I.1941, H. A. Hafiz).

28. *Verania allardi* (Mulsant)

1866. *Lemnia Allardi* Mulsant, Monograph Coccinellidae : 249 (Mem. Acad. Lyon (1869-1870) 16 : 23) (Type locality : Northern India).
 1874. *Verania Allardi* (Muls.), Crotch, Revision of the coleopterous family, Coccinellidae : 177 (London).
 1932. *Verania Allardi* (Muls.), Korschefsky, Coleopt. Cat., Berl. pt. 120, Coccinellidae, 2 : 307.

Material.—1 example : Manipur, near Modbung, ca. 3,500 ft., 1.XI.1945.

Remarks.—This example resembles the typical *Verania allardi* in all respects (including the male genitalia) except that the pair of elytral spots present in typical *allardi* are absent. The sutural black line and the two black spots on the pronotum are in the same positions as in typical *allardi*.

Originally recorded from N. India, the species *allardi* has since been reported from Sumatra, Java and Borneo. A variety *malaccensis* Crotch has also been recorded from Malacca, New Guinea, the Philippines and China.

Family TENEBRIONIDAE

29. *Gonocephalum depressum* (Fabricius)

- 1798. *Opatrum depressum* Fabricius, *Supplementum Entomologiae Systematicae*, (Suppl.). 41 (Type locality : India).
- 1906. *Gonocephalum depressum* (Fabr.), Gebien, *Dtsch. ent., Z.* 2 (1906) : 213.
- 1911. *Gonocephalum depressum* (Fabr.), Gebien, *Coleopt. Cat., Berl.* pt. 22, Tenebrionidae : 323.

Material.—8 examples : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 20-30.IX.1945 (1 ex.), 11.X.1945 (1 ex.), 4.XI.1945 (1 ex.), 1.XII.1945 (1 ex.), 3.XII.1945, in soil (1 ex.), 9.XII.1945 (2 ex.), 14.XII.1945, common on ground (1 ex.).

Remarks.—Gebien who examined the Fabrician type states that it comes from Bengal. The species is, however, stated to be widely distributed in India.

Family BOSTRICHIDAE

30. *Heterobostrychus aequalis* (Waterhouse)

- 1884. *Bostrichus aequalis* Waterhouse, *Proc. zool. Soc. Lond.* 1884 : 215 (Type locality : Maroe, Timor-Laut Island).
- 1898. *Heterobostrychus aequalis* (Waterh.), Lesne, *Ann. Soc. ent. Fr.* 67 : 555, 557, 560.
- 1938. *Heterobostrychus aequalis* (Waterh.), Lesne, *Coleopt. Cat., Berl.* pt. 161, Bostrychidae : 37.
- 1941. *Heterobostrychus aequalis* (Waterh.), Beeson, *The ecology and control of forest insects.* : 64 (Dehra Dun).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 20-30.IX.1945.

Remarks.—The species is widely distributed throughout the Oriental Region and extends to Madagascar in the west and New Guinea in the east. In the Z.S.I. collections examples from Malabar, Kashmir, Bengal, Assam and Burma are present.

31. *Xylothrips flavipes* (Illiger)

- 1801. *Apte flavipes* Illiger, *Mag. Insectenk.* (Illiger) 1 : 171 (Type locality : Africa).
- 1900. *Xylothrips flavipes* (Illig.), Lesne, *Ann. Soc. ent. Fr.* 69 : 621.
- 1938. *Xylothrips flavipes* (Illig.), Lesne, *Coleopt. Cat., Berl.* pt. 161, Bostrychidae : 67.
- 1941. *Xylothrips flavipes* (Illig.), Beeson, *The ecology and control of forest insects* : 97 (Dehra Dun).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 8.X.1945.

Remarks.—Beeson states this species to be frequent in tropical and moist subtropical parts of India but not common in the dry regions. He also states that it does not ascend to high elevations. In the Z.S.I collections examples from the Andaman Islands, Bengal, Assam and Ceylon are present. It occurs in Madagascar, besides several parts of the Oriental Region.

Family SCOLYTIDAE

32. *Xyleborus minor* (Stebbing)

- 1907. *Phloesinus minor* Stebbing, Indian For. Bull. 11 : 37.
- 1909. *Phloesinus minor* Stebbing, Indian For. Mem. 1(2) : 20.
- 1914. *Dryocoetes minor* (Stebbing), Indian forest insects : 549 (London).
- 1930. *Xyleborus minor* (Stb.), Beeson, Indian For. Rec. 14 : (10) : 70-73.

Material.—4 examples : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 18.X.1945.

Remarks.—Beeson gives a detailed account of the distribution and biology of this species which is of importance to forestry in India. The species is widely distributed in India, having been recorded from several places in Uttar Pradesh, Madhya Pradesh, Bombay, Bengal and Assam. It is also known from Magayi Reserve in Burma.

Family SCARABAEIDAE

33. *Gymnopleurus aethiops* Sharp

- 1875. *Gymnopleurus aethiops* Sharp, Coleopterologische Hefte, Munchen, 13 : 34 (Type locality : Burma).
- 1931. *Gymnopleurus aethiops* Sharp, Arrow, Fauna British India..Coleopt. Lamellicornia, 3 : 62 (London).

Material.—10 examples : Manipur, mile-stone 34, Palel, on Imphal-Palel-Tamu Rd., ca. 3,750 ft., in foeces, 4.IX.1945.

Remarks.—Originally described from Burma, the species has since been recorded from Ceylon, India, Siam, Hongkong and Formosa. Within the boundaries of India it is known from Cochin and Nilgiri Hill, N. Kanara, Nedungayam and Nilumbur (Bombay State). The present record from Assam is, therefore, of interest.

34. *Catharsius molossus* Linneaus

- 1758. *Scarabaeus molossus* Linneaus, Systema Naturae, (ed. X) : 347 (Type locality : India).
- 1931. *Catharsius molossus* (Linn.), Arrow, Fauna British India..Coleopt. Lamellicornia, 3 : 94.

Material.—5 examples : Manipur, Imphal Valley, 2,000 ft., —.VI. 1945 (1 ex.), —.VII.1945 (1 ex.), 30.VIII.1945 (1 ex.), --.XI.1945 (1 ex.), 16 miles N. of Imphal, on Dimapur Rd., 14-19.IX.1945 (1 ex.).

Remarks.—The species is distributed in Ceylon, Andaman Islands, Sikkim, and India. In the latter country it is known from the Punjab (Simla), Uttar Pradesh (Nainital District), Bihar, Assam, Bengal, Orissa, Bombay State, Mysore and South Malabar.

35. *Onthophagus hystrix* Boucomont

1914. *Onthophagus hystrix* Boucomont, *Ann. Mus. Civ. Genova*, **46** : 238
 (Type locality : Malabar, Coromondol).
1931. *Onthophagus hystrix* Bouc. Arrow, *Fauna British India..Coleopt.*
Lamellicornia, **3** : 164.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft.,—VIII. 1945.

Remarks.—The species is distributed in Ceylon, India and Burma. It is reported to be common in India and has been recorded by Arrow from Bihar, Uttar Pradesh, Madhya Pradesh, Bombay and Madras States. In the Z S.I. collection, besides the material from some of these localities, examples from Barkuda Island (Chilka lake), Orissa are also present.

36. *Aphodius costatus* Schmidt

1908. *Aphodius costatus* Schmidt, *Entomol. Wochenbl.* : 47 (Type locality : India).
1910. *Aphodius costatus* Schmidt, *Coleopt. Cat., Berl.* pt. 20 : Scarabaeidae, Aphodinae : 18.

Material.—1 example : Manipur, 66 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 14.X.1945.

Remarks.—Schmidt records this species from Belgaum (Bombay State) and Kulu (Punjab). The present record from N.-E. India is, therefore, of interest.

37. *Anomala dimidiata* (Hope)

1831. *Euchlora dimidiata* Hope, in Gray, *Zoological miscellany* : 23 (London)
 (Type locality : Nepal).
1917. *Anomala dimidiata* (Hope), Arrow, *Fauna British India..Coleopt.*
Lamellicornia, **2** : 232 (London).

Material.—9 examples : Manipur, Imphal Valley, 2,000 ft.,—VII.1945 (4 ex.), —X.1945 (2 ex.), —XI.1945 (1 ex.) ; 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 8.X.1945 (1 ex.), 4.XI.1945 (1 ex.).

Remarks.—Originally described from Nepal, the species has since been recorded from Kashmir, Punjab (Kulu and Simla Hills), Uttar Pradesh (Chawi, Nainital), Bihar (Pusa), Bengal (Sarda, Calcutta), Sikkim and Assam (Shillong, Manipur, Khasi Hills).

38. *Adoretus compressus* (Weber)

1801. *Melolontha compressus* Weber, *Observationes Entomologicae*.
 72 (Type locality : Sumatra).
1844. *Adoretus umbrosus* Burmeister, *Handbuch der Entomologie*, **4** : 475.
1912. *Lepadretus compressus* (Weber), Ohaus, *Eng. Blatt.*, **8** : 224.
1917. *Adoretus compressus* (Weber), Arrow, *Fauna British India..Coleopt.*
Lamellicornia, **2** : 311 (London).

Material.—1 example : Manipur, Imphal Valley, 2,000 ft.,
 25. VIII. 1945.

Remarks.—This is a widely distributed species which has been recorded from India, Burma, Indo-China, Malaya Peninsula, Sumatra, Java, Borneo and Mauritius. In India it has been recorded from Purnea. Ohaus (*l. c.*) recorded it from Madras and South Ceylon but about these records Arrow (*l. c.*) expresses doubt in the following words : “ .it seems likely that *A. (Adoretus) bicaudatus* or another of the closely similar forms may have been mistaken for it. It is essentially a Malayan insect although its presence in Mauritius indicates its capability of extending its range. If incidently introduced into fresh regions it is probably capable of becoming a serious pest, as a race or very closely related species (*A. sinicus*) introduced into Hawaiian Islands has proved very destructive to sugarcane, its larvae feeding upon the roots.” It is now well known that there is a certain amount of Malayan element in the fauna of South India and Ceylon. In view of this and in the absence of a re-examination of Ohaus’ material, it would be more appropriate to accept the distribution of the species as given by Ohaus.

39. *Alissonotum crassum* Arrow

- 1908. *Alissonotum crassum* Arrow, *Trans. ent. Soc. Lond.* 1908 : 323 (Type locality : Assam ; Burma).
- 1910. *Alissonotum crassum* Arrow, *Fauna British India.. Coleopt. Lamellicornia*, 1 : 302 (London).

Material.—1 example : Manipur, Palel, Imphal-Tamu Rd., 4.IX. 1945.

Remarks.—The species has already been recorded from Bengal (Rajmahal), Assam (Sylhet) and Burma. In the Z.S.I. collections examples from Sikkim are also present.

40. *Heteronychus lioderes* Redtenbacher

- 1867. *Heteronychus lioderes* Redtenbacher, *Reise der.. 'Novara'*. *Wien Zoologischer Theil Coleopteren* : 75 (Type locality : Java).
- 1891. *Heteronychus poropygus*, Bates, *Entomologist*, 1891 Suppl. : 19 (London).
- 1910. *Heteronychus lioderes* (Redt.), Arrow, *Fauna British India Coleopt. Lamellicornia*, 1 : 295 (London).

Material.—2 examples : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 1, 5.X.1945.

Remarks.—The species is distributed in India, Nepal, Burma, Malaya Peninsula, Java and Celebes. In India it has been recorded from Bengal and Assam. In the Z.S.I. collection examples from Bihar are also present.

41. *Dynastes gideon* (Linneaus)

- 1767. *Scarbæus Gideon* Linneaus, *Systemae Naturae*, (12th Ed.) 1 (2) : 541.
- 1910. *Xylotrupes gideon* (Linn.), Arrow, *Fauna British Indiu Coleopt. Lamellicornia*, 1 : 262 (London).
- 1937. *Dynastes gideon* (Linn.), Arrow, *Coleopt. Cat., Berl. pt.* 156 : 96.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca. 3,500 ft., 20-30 IX.1945.

Remarks.—The species is distributed in Ceylon, India, Sikkim, Burma, Siam, South China, Malacca, Borneo, etc. In India it has been recorded

from various parts including Assam (Shillong, Sibsagar, Cachar), Bengal (Calcutta), Bombay State and Travancore.

42. *Coilodera penicillata* Hope

- 1831. *Coilodera penicillata* Hope, in Gray, *Zoological miscellany* : 25 (London) (Type locality : Nepal).
- 1842. *Macronota penicellata* (Hope), Burn., *Handb. ent.*, 3 : 371.
- 1910. *Macronota penicillata* (Hope), Arrow, *Fauna British India.. Coleopt. Lamellicornia*, 1 : 44 (London).
- 1921. *Coilodera penicillata* Hope, Schenkling, *Coleopt. Cat., Berl. pt. 72, Scarabaeidae, Cetoniinae* : 133.

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Rd., ca 3,500 ft., —.XI.1945.

Remarks.—Recorded earlier from Sikkim, Khasi Hills (Assam) and Burma, this species is represented in the Z.S.I. collections by examples from Darjeeling and Nilgiri Hills.

Family CERAMBYCIDAE

43. *Xystrocera globosa* (Olivier)

- 1795. *Cerambise globosus* Olivier, *Entomologie* 4 : 27 (Type locality : Batavia, Java).
- 1906. *Xystrocera globosa* (Oliv.), Gahan, *Fauna British India Coleopt. Cerambycidae* : 106 (London).
- 1912. *Xystrocera globosa* (Oliv.), Aurivillius, *Coleopt. Cat., Berl. pt. 39, Cerambycidae* : 37.

Material.—3 examples : Manipur, 16 miles N. of Imphal, on Dimapur Road, ca. 3,500 ft. (2 ex.). Near Modbung, ca. 3,500 ft., —.XI.1945 (1 ex.).

Remarks.—This Austral-Asian species is widely distributed and has been recorded by Aurivillius from Scychell Island, Egypt, Mauritius, Ceylon, India, Burma, Siam, Malaya Peninsula, Java, Celebes, Philippine and Hawaiian Islands. In India it has been recorded by Gahan from Madras, Mysore, Bombay, Bengal and Assam. Examples from Bihar and the Punjab are also present in the Z.S.I.

44. *Aphrodisium cribricolle* Poll

- 1890. *Aphrodisium cribricolle* Poll, *Notes Leyd. Mus.*, 12 : 157 (Type locality : Sikkim).
- 1906. *Aphrodisium cribricolle* Poll, Gahan, *Fauna British India .. Coleopt. Cerambycidae* : 207 (London).

Material.—2 examples : Manipur, 16 miles N. of Imphal, on Dimapur Road, ca. 3,500 ft., 9.XI.1945.

Remarks.—Hitherto known from Sikkim only, the present record from Manipur is of interest.

45. *Batocera numitor* Newman

- 1842. *Batocera numitor* Newman, *Entomologist*, 1 : 275 (London).
- 1922. *Batocera numitor* Newm., Aurivillius, *Coleopt. Cat., Berl. pt. 73, Cerambycidae, Lamaiini* : 125.
- 1941. *Batocera numitor* Newm., Beeson, *Ecology and control of forest insects* : 147 (Dehra Dun).

Material.—1 example : Manipur, near Modbung, ca. 3,500 ft., 1. XI.1945.

Remarks.—This is a wide-spread species which has been recorded from Nepal, India (Bengal, Assam), Burma, Siam, Sumatra, Java, Celebes and Philippines.

46. *Glena pulchella* Thomson

1860. *Glena pulchella* Thomson, *Essai D'une classification de la family Cerambycidae* : 58.
 1923. *Glena pulchella* Thomson, *Aurivilliu, Coleopt. Cat., Berl. pt. 74, Cerambycidae, Lamaiini* : 499.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft.,—VII.1945.

Remarks.—Previously known from Burma and Assam, the species is represented in the Z. S. I. collections by examples from Sikkim ; Darjeeling and Kurseong, Bengal ; Khasi Hills, Assam ; Sahibgunj, Bihar ; South Mysore (*H. L. Andrewes*, 6.II.1912) and Nilgiri Hills (*H. L. Andrewes*).

Family CHRYSOMELIDAE

47 *Lema rufotestacea* Clark

1866. *Lema rufotestacea* Clark, *Cut. Phyt. Appl.* : 29.
 1908. *Lema rufotestacea* Clear Jacoby, *Fauna British India Coleopt. Chrysomelidae* : 36 (London).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Road, ca. 3,500 ft., 8.X.1945.

Remarks.—This species occurs in Deccan, Malabar, Mahe, Assam (Patkai Mountains) and Burma.

48. *Diamorpha pallens* (Olivier)

1808. *Clytra pallens* Olivier, *Entomologie*, 4 : 836 (Type locality : Bengal).
 1848. *Diamorpha melanopus* Lacordaire, *Mon. Phyt.* 2 : 238.
 1908. *Diamorpha melanopus* Lac., Jacoby, *Fauna British India Coleopt. Chrysomelidae* : 168 (London) (Synonymy discussed).
 1913. *Diamorpha pallens* (Lac.), Clavareau, *Coleopt. Cat., Berl. pt. 53, Chrysomelidae* : 41.

Material.—5 examples : Manipur, 16 miles N. of Imphal, on Dimapur Road, ca. 3,500 ft., 1, 2.X.1945 (2 ex.), 18.X.1945 (3 ex.).

Remarks.—Jacoby regards it as one of the commonest species of the genus. It has been recorded earlier from East India and Siam. Examples from Bengal (Darjeeling District, Chittagong), Orissa (Puri district) and Bihar (Sripur, Saran) are also present in the Z. S. I. collections.

49. *Aulacophora foveicollis* (Lucas)

1849. *Galeruca foveicollis* Lucas, *Explor. Alger Ent.* : 42 (Type locality : Algier).
 1879. *Aulacophora foveicollis* (Luc.), Baly *Cistula Entomologica*, 2 : 445 (London).
 1936. *Aulacophora foveicollis* (Luc.), Maulik, *Fauna British India . . . Coleopt. Chrysomelidae (Galerucinae)* : 173 (London).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Road, ca. 3,500 ft., 18.X.1945.

Remarks.—The species which is pest of cucurbits is distributed throughout India and is also known from Greece, South Europe, North Africa, Cyprus, Aden, Persia, Pakistan, Ceylon, Andaman Islands and Burma. Essentially a Palaearctic species it has spread extensively into this part of the Oriental Region.

50. *Galerucella placida* Baly

1878. *Galerucella placida* Baly, *Cistula Entomologica*, 2 : 381 (London) (Type locality : Jhelum Valley, India).
 1936. *Galerucella placida* Baly, Maulik, *Fauna British India Coleopt.* Chrysomelidae (Galerucinae) : 217 (London).

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 1.IX.1945.

Remarks.—The species is widely distributed in India, and has been recorded from Kashmir, Punjab, U. P., Bihar, Bengal and South India. It is also known from Burma and the present report from Assam fills up a gap in record of its distribution.

51. *Galerucida singularis* Harold

1880. *Galerucida singularis* Harold, *Stettin. ent. Ztg.*, 41 : 146.
 1936. *Galerucida singularis* Harold, Maulik, *Fauna British India Coleopt.* Chrysomelidae (Galerucinae) : 551 (London).

Material.—1 example : Manipur, 16 miles N. of Imphal, on Dimapur Road, ca. 3,500 ft., 15.X.1945.

Remarks.—The species has previously been recorded from Assam (Sadiya), Burma (Ruby Mines) and Indo-China (Tonking).

52. *Monolepta lineata* Weise

1904. *Monolepta duvivieri* Jacoby, *Ann. Soc. ent. Belg.*, 48 : 404 (name preoccupied). (Type locality : Nilgiri Hills, South India).
 1915. *Monolepta lineata*, Weise, *Dtsch. ent. Z., Afr. Exp. Zool.* 1, (1915) : 177.
 1936. *Monolepta lineata* Weise, Maulik, *Fauna British India Coleopt.* Chrysomelidae (Galerucinae) : 398 (London).

Material.—2 examples : Manipur, 16 miles N. of Imphal, on Dimapur Road, ca. 3,500 ft., on grass, 8.X.1945.

Remarks.—Hitherto known from Nilgiri Hills, South India, the present record from Manipur is of special interest because of the affinity of the fauna of Nilgiri Hills with that of Assam.

53. *Monolepta signata* (Olivier)

1808. *Galeruca signata* Olivier, *Entomologie*, 6 : 665. (Type locality : Bengal).
 1889. *Monolepta signata* Oliv., Jacoby, *Ann. Mus. Civ. Genova*, 26 : 229.
 1936. *Monolepta signata* (Oliv.), Maulik, *Fauna British India Coleopt.* Chrysomelidae (Galerucinae) : 410 (London).

Material.—10 examples : Manipur, 16 miles north of Imphal, on Dimapur Road, ca. 3,500 ft., 8.X.1945 (5 ex.) 18.X.1945 (1 ex.), 22.X.1945 (2 ex.). Near Modbung, ca. 3,500 ft., 1.XI.1945 (2 ex.).

Remarks.—Hitherto recorded from Deccan, Malabar, Bengal and Assam (Sadyia) in India, the species occurs in Siam and Hongkong also. A variety from Ceylon has also been described by Maulik. In the Z. S. I. collections examples from the following additional localities are present : Bihar (Katihar, Rajmahal) ; Bengal (Berhampur, Calcutta, Darjeeling) ; Sikkim ; Upper Burma (Mandalay).

54. *Monolepta picturata* Jacoby

1896. *Monolepta picturata* Jacoby, Ann. Soc. ent. Belg. **40** : 292 (Type locality : Burma).
 1936. *Monolepta picturata* Jacoby, Maulik, Fauna British India .. Coleopt. Chrysomelidae (Galerucinae) : 412 (London).

Material.—7 examples : Manipur, 16 miles north of Imphal, on Dimapur Road, ca. 3,500 ft., 3.X.1945 (1 ex.), 22.X.1945 (6 ex.).

Remarks.—Previously recorded from Burma only, the species is for the first time being recorded from India.

55. *Monolepta maculosa* Allard

1890. *Monolepta maculosa* Allard, Comptes-Rendus Soc. ent. Belg. (1890) ; **82** (Type locality : Belgaum and Kanara).
 1936. *Monolepta maculosa* Allard, Maulik, Fauna British India Coleopt. Chrysomelidae (Galerucinae) : 444 (London).

Material.—2 examples : Manipur, Imphal Valley, 2,000 ft., 5.IX.1945 (1 ex.), 10-13.IX.1945 (1 ex.).

Remarks.—Hitherto known from Bombay State, the species is for the first time being recorded from North-East India.

56. *Haltica cyanea* Weber

1801. *Haltica cyanea* Weber, Observationes Entomologiae, Kiliae, **1** : 57 (Type locality : Sumatra).
 1807. *Haltica janthina* Illiger, Mag. Inskde., **6** : 115 (Type locality : Sumatra).
 1889. *Haltica australis* Blackburn, Proc. linn. Soc. N. S. Wales (2) **3** : 1943 (Type locality : South Australia).
 1896. *Haltica birmanensis* Jacoby, Ann. Soc. ent. Belg. **40** : 254 (Type locality : Burma).
 1923. *Haltica coerulea* Weise (not *coerulea* Olivier), Ark. Zool. **15**(12) : 109 (Type locality : Queensland).
 1926. *Haltica cyanea* Weber, Maulik, Fauna British India Coleopt. Chrysomelidae (Chrysomelinae and Halticinae), 442 (London).
 1933. *Haltica cyanea* Weber, Chen, Peking nat. Hist. Bull. **8** (1) : 51.
 1940. *Haltica cyanea* Weber, Heikertinger and Csiki, Coleopt. Cat., Berl. pt. 166, Chrysomelidae : Halticinae : 277 (Synonymy).

Material.—15 examples : Manipur, 16 miles North of Imphal, on Dimapur Road, ca. 3,500 ft., 25.IX.1945 (1 ex.), on shrub, in copula 2.X.1945 (2 ex.), 18.X.1945 (11 ex.), 22.X.1945 (1 ex.).

Remarks.—Distributed in India, Burma, Indo-China, China, Japan, Sumatra, Java and Australia. In India it is recorded from various parts of the Punjab, Bombay and Bengal. In the Z.S.I. collections

examples from Sikkim, Ranchi and Bangalore are also present. It would be interesting to know its exact southern limits in peninsular India.

57. *Haltica coerulea* (Olivier)

- 1791. *Galeruca coerulea* Olivier, *Encyclopedic Methodicue*, 6 : 590 (Paris) (Type locality : East Indies).
- 1926. *Haltica coerulea* (Oliv.), Maulik, *Fauna British India . . . Coleopt.* Chrysomelidae (Chrysomelinae and Halticinae) : 423 (London).

Material.—5 examples : Manipur, near Modbung, 3,500 ft., 1.XII.1945.

Remarks.—The species has been recorded from Ceylon, Madras State (Coromondal Coast, Nilgiri Hills), and Assam (Sadiya). Examples from Calcutta and Gosaba in Bengal are also present in the Z. S. I. collection.

58. *Haltica foveicollis* Jacoby

- 1889. *Haltica (Graptodera) foveicollis* Jacoby, *Ann. Mus. Civ. Genova*, 27 : 190 (Type locality : Burma).
- 1926. *Haltica foveicollis* Jacoby, Maulik, *Fauna British India . . . Coleopt.* Chrysomelidae (Chrysomelinae and Halticinae) : 419 (London).

Material.—1 example : Manipur, near Modbung, ca. 3,500 ft., 1.XI. 1945.

Remarks.—This species has hitherto been recorded from Burma (Rangoon, Toungoo, Tharawady and Tenasserim). The present example compares very well with the material from Burma in the Z. S. I. collection.

59. *Aspidomorpha sanctae-crucis* (Fabricius)

- 1794. *Cassida sanctae-crucis* Fabricius, *Entomologiae systematicae*, 4 : 446 (Type locality : Central America).
- 1854. *Aspidomorpha sanctae-crucis* (Fabr.), Boheman, *Mon. Cassid.* 2 : 288.
- 1919. *Aspidomorpha sanctae-crucis* (Fabr.), Maulik, *Fauna British India . . . Coleopt.*, Chrysomelidae (Hispinae and Cassidinae) : 329 (London).

Material.—3 examples : Manipur, near Imphal, at mile stone 130 on Imphal-Dimapur Road, 17 VIII.1945 (2 ex.) ; Imphal Valley, 2,000 ft., 22.VIII.1945 (1 ex.).

Remarks.—The species when alive has golden colour. The following description has been given on the label by the collector. “ Elytra : dorsally bright golden with copper tinge, outer half transparent, two dots golden dorsally, dark ventrally ; ventrally only translucent, with golden tinge of dorsal surface. Pronotum : like elytra dorsally. Abdomen dorsally dirty yellow, ventrally metallic gold, with green tinge, legs similar but not golden. Eyes and mouth-parts black.”

The species is widely distributed in India being recorded from Madras, Bombay, Bengal and Assam. It is also known from Sikkim. Examples from Bihar are also present in the Z. S. I. collections. Outside India it is known from Burma, Ceylon, Indo-China, West China, Sunda Islands, Sumatra and Borneo.

Family CURCULIONIDAE

60. *Esamus circumdatus* (Wiedemann)

1821. *Curculio circumdatus* Wiedemann, *Mag. Entom.* (Germar) 4: 156 (Type locality : Bengal).
1863. *Tanymecus circumdatus* (Wied.), Maklin, *Act. Soc. Fenn.* 7: 129.
1919. *Tanymecus circumdatus* (Wied.), Marshall, *Fauna British India* Coleopt. Curculionidae : 90-91 (London).
1933. *Esamus circumdatus* (Wied.), Gunther and Zumpt., *Coleopt. Cat.*, Berl. pt. 131, Curculionidae : 95.

Material.—2 examples : Manipur, 16 miles North of Imphal on Dimapur Road, ca. 3,500 ft., IX.1945 (1 ex.) ; near Modbung, ca. 3,500 ft. 1.XI.1945 (1 ex.).

Remarks.—The species is distributed in the Punjab, Bengal, Assam, Nepal, Burma and Formosa.

61. *Tanymecus indicus* Faust

1894. *Tanymecus indicus* Faust, *Ann. Mus. Civ. Genova*, 34: 177 (Type locality ; Calcutta, East India).
1916. *Tanymecus indicus* Faust, Marshall, *Fauna British India* Coleopt. Curculionidae : 99 (London).
1933. *Tanymecus indicus* Faust, Gunther and Zumpt., *Coleopt. Cat.*, Berl. pt. 131, Curculionidae : 92.

Material.—5 examples : Manipur, Imphal Valley, 2,000 ft., 10-13.IX. 1945 (2 ex.), 26.IX.1945 (1 ex.) ; 16 miles North of Imphal, on Dimapur Road, ca. 3,500 ft., 22.X.1945 (2 ex.).

Remarks.—The species is widely distributed in India, being known from the Punjab, Uttar Pradesh, Bihar, Bengal and Assam. It is stated to be a pest of seedling of various crops.

62. *Episomus guttatus* Boheman

1845. *Episomus guttatus* Boheman, in Schonher, *Synonymia Insectorum* (Gen. et. Spec. Curculion.), 8: 435 (Type locality : Assam).
1916. *Episomus guttatus* Boh., Marshall, *Fauna British India* .. Coleopt. Curculionidae : 217 (London).
1937. *Episomus guttatus* Boh., Loha, *Coleopt. Cat. Berl.* pt. 160, Curculionidae : 367.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 31.VIII. 1945.

Remarks.—The species has already been recorded from Assam (Naga Hills and Khasi Hills), Burma and Malaya.

63. *Astycus lateralis* (Fabricius)

1792. *Curculio lateralis* Fabricius, *Entomologi Systematae* 1: 454 (Type locality : East Indies).
1892. *Astycus lateralis* (Fabr.), Faust, *Ann. Soc. ent. Fr.*, 61: 505 (Indo-China).
1916. *Astycus lateralis* (Fabr.), Marshall, *Fauna British India* Coleopt. Curculionidae : 139 (London).

Material.—2 examples : Manipur, 16 miles north of Imphal, on Dimapur Road, ca. 3,500 ft., 1.X.1945 (1 ex.) ; Near Modbung, 3,500 ft., 1.XI.1945 (1 ex.).

Remarks.—The species is distributed in India, Burma, Siam and Malaya Peninsula. It attacks tea plants in Assam and mulberry bushes in Rangoon (Burma). In the Z. S. I. collections examples from various parts of Bengal, Bihar, Nepal and Burma are present.

64. *Phytoscaphus nubilus* Faust

1894. *Phytoscaphus nubilus* Faust, *Ann. Mus. Civ. Genova*, **34** : 218 (Type locality : Burma).

Material.—6 examples : Manipur, 16 miles North of Imphal, on Dimapur Road, ca. 3,500 ft., 18.X.1945 (1 ex.), 22.X.1945 (1 ex.) ; Near Modbung ca. 3,500 ft., 1.XI.1945 (4 ex.).

Remarks.—Known earlier from Burma, the present record is the first one from India. Examples from Shillong and Khasi Hills, Assam, are also present in the Z. S. I. collections.

65. *Xanthochelus blumeae* Marshall

1938. *Xanthochelus blumeae* Marshall, *India For. Rec. (N. S.) Ent.* **3** : 159, (Type locality : Dehra Dun).

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 13.X.1945.

Remarks.—Already known from Dehra Dun, U. P., the present record appears to be a new one for North-East India.

66. *Paracycnotrachelus cygneus* (Fabricius)

- 1801. *Attelabus cygneus* Fabricius, *Systema Eleutherorum*, **2** : 417 (Type locality : Sumatra).
- 1833. *Apoderus cygneus* (Fabr.), Gyllenhall, in Schonher, *Synonumia insectorum (Gen. et. Spec. Curculion.)*, **1** : 190.
- 1860. *Apoderus* (sub-gen. *Cycnotrachelus*) *cygneus* (Fabr.), Jekel, *Ins. Saunders*, **2** : 160.
- 1929. *Paracycnotrachelus cygneus* (Fabr.), VöB, *Stettin. ent. Ztg.* **90** : 131, 135.
- 1930. *Paracycnotrachelus cygneus* (Fabr.), Torre and VöB, *Coleopt. Cat., Berl.* pt. 110, Curculionidae ; Aphodinae : 31.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 10-13.IX. 1945.

Remarks.—Though not previously known from Assam, the species has been recorded from Bengal, Burma, Cambodia, Laos, Penang, Sumatra, Java and Borneo.

67. *Apoderus notatus* (Fabricius)

- 1792. *Attelabus notatus* Fabricius, *Entomologiae Systematicae*, **1** : 385 (Type locality : India).
- 1860. *Apoderus notatus* (Fabr.), Jekel, *Ins. Saunders.*, **2** : 170.
- 1930. *Apoderus notatus* (Fabr.), Torre and VöB, *Coleopt. Cat., Berl.* pt. 110, Curculionidae ; Apoderinae : 21.

Material.—1 example : Manipur, 16 miles North of Imphal, on Dimapur Road, ca. 3,500 ft., 25.IX.1945.

Remarks.—The species is distributed in India, Burma, Tonking and China. Besides the present example from Assam, material from Shillong is also present in the Z. S. I. collections.

68. *Alcides scenicus* Faust

1894. *Alcides scenicus* Faust, *Ann. Mus. Stor. nat. Genova*, **34** : 256, 260 (Type locality : Burma).
 1934. *Alcides scenicus* Faust, Klima, *Coleopt. Cat., Berl. pt.* 135, Curculionidae ; Gymnetrinae : 59.

Material.—1 example : Manipur, 16 miles North of Imphal, on Dimapur Road, ca. 3,500 ft., 4.X.1945.

Remarks.—The species has hitherto been recorded from Burma, Tonking (subspecies *instrusomimus* Heller¹ and Japan). Other examples from Garo Hills, Assam, Mungphu and Kallimpong, Darjeeling District, Bengal, are also present in the Z. S. I. collections.

69. *Gasterocercus anatinus* Chevrolet

1880. *Gasterocercus anatinus* Chevrolet, *Naturaliste, Paris*, **2** (4) : 94 (Type locality : Andaman Islands).
 1936. *Gasterocercus anatinus* Chev., Hustache, *Coleopt. Cat., Berl. pt.* 151, Curculionidae ; Cryptorrhynchinae : 186.

Material.—1 example : Manipur, Imphal Valley, 31.VIII.1945.

Remarks.—Hitherto known from Andaman Islands, the species is now being recorded from the mainland of India for the first time.

70. *Athesapeuta vinculata* Faust

1894. *Athesapeuta vinculata* Faust., *Ann. Mus. Civ. Genova*, **34** : 315 (Type locality : Burma).
 1938. *Athesapeuta vinculata* Faust, Hustache, *Coleopt. Cat., Berl. pt.* 163, Curculionidae ; Barinae : 169.

Material.—9 examples : Manipur, 16 miles North of Imphal, on Dimapur Road, ca. 3,500 ft., common on grass, 8.X.1945 (8 ex.) ; Near Modbung ca. 3,500 ft., 1.XI.1945 (1 ex.).

Remarks.—Previously known only from Burma, the present record is the first one from India.

71. *Cyrtotrachelus buqueti* Guerin, var. DUX Boheman

1844. *Cyrtotrachelus buqueti* Guerin-M, *Ichonographie Regne Anim. Ins.* : 176 (Type locality : Bombay).
 1845. *Cyrtotrachelus dux* Boheman, in Schonher, *Synonymia Insectorum (Gen. et. Spec. Curc.)*, **8**(2) : 221 (Type loc. : Assam).
 1866. *Cyrtotrachelus buqueti* var. *dux* Boh., Lacordire, *Gen. Coleopt.* **7** : 272.
 1936. *Cyrtotrachelus buqueti* var. *dux* Boh., Csiki, *Coleopt. Cat., Berl. pt.* 149, Curculionidae ; Rhynchophorinae : 9.

Material.—1 example : Manipur, Imphal Valley, 2,000 ft., 4.IX.1945.

Remarks.—The variety *dux* has been recorded from Assam, Bengal, Sikkim and Burma ; *buqueti* is also known from Tonking besides India and Burma. Two of its other varieties, viz. *nigrocinctus* Faust and *borealis* Jordon, are known from Burma and China and China and Japan respectively.

¹ Heller, *Dtsch. ent. Zt.*, 1922; 19.

IV. ACKNOWLEDGMENTS

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